PATENT SPECIFICATION

725,189

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COMPLETE SPECIFICATION

Improvements in or relating to devices for Glazing without putty

I, MAURICE ARLET, a Citizen of the French Republic, of 3, rue Hamelin, Paris, France, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The methods of glazing currently in use comprise joints formed by a layer of putty covering the edges of each pane to effect sealing. Now putty has the serious disadvantage of deteriorating relatively quickly under the influences of bad weather and variations in temperature.

These disadvantages are particularly noticeable in the case of studio roof lights, greenhouses and forcing frames, where the panes are in a substantially horizontal position. As a result, it is necessary to re-putty the joints periodically, if both leaks and a reduction in the solidity of the construction are to be avoided.

It is the object of the present invention to overcome these disadvantages.

According to this invention the panes are supported by sectional irons the centre portions of which comprise extensions in the shape of a T each extension separating two consecutive panes, and are held by resilient locking members each of which straddles the T-extension of a sectional iron and rests against each arm of the T, thus urging the panes situated on each side of the said extension against the underparts of the sectional iron, which thus form gutters.

Two specific embodiments of the invention are illustrated, by way of example, and without any limiting character, in the accompanying drawings, in which:—

Fig. 1 is an elevation section perpendicular to one of the irons according to one embodiment of the invention;

Fig. 2 is a corresponding plan view;

Fig. 3 shows, in perspective, a specific application of the above device; and

Fig. 4 shows in elevation a modification

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in the locking spring.

Referring to Figs. 1 and 2, 1 represents a sectional iron supporting two consecutive panes 2 and 2'. Other sectional irons, not illustrated, but identical with 1, are arranged parallel thereto and at a certain distance therefrom, the distance being of the order of 40 to 50 cms. for example, in the case of greenhouses. The cross-section of the iron 1, which is symmetrical in relation to the axis X-X, comprises essentially a medial extension *a b c d, a' b' c' d'*. This extension is substantially in the shape of a T, the arms of which are formed by the contours *a b c* and *a' b' c'* and the stem of which is constituted by *c d* and *c' d'*.

These two latter segments are connected to the underpart of the sectional iron, which forms the contour *d e f* and *d' e' f'*.

The end illustrated of the pane 2 rests on the edge *f* and is substantially in contact with the wall *c d*. Similarly, the pane 2', in contact with *c' d'* rests on *f'*. A resilient locking member is provided to secure the panes against the underpart of the iron 1. This member is constituted by a spring 3, which is cylindrical in shape and is arranged symmetrically in relation to X-X, and which straddles the extension *a b c d, a' b' c' d'* of the iron 1. The ends *g* and *g'* of this spring rest in the angle formed by the contours *b c, c d* and *b' c', c' d'* respectively. As this angle is acute, the spring 3 cannot possibly slip out. The spring 3 thus acts compressively and urges the panes 2 and 2' against *f* and *f'*.

The operation of this very simple device is easily understood:

The irons 1 having been arranged with the required spacing and at the required points, and then secured in this position, the panes 2 are placed on the edges *f*. Finally, the springs 3 are inserted, preferably at the ends of each iron, and arranged at regular intervals. The water which is liable to run down the surface of the panes can at most only fall

into the prismatic grooves *c d e f* (or *c' d' e' f'*) formed by the underpart of each sectional iron, which thus acts as a gutter. The water is then drained to the outside by these gutters and it is obvious that in no circumstances can the surface protected by the panes become wet.

Naturally the two sectional irons running longitudinally along the outside edge of the glazing only support panes on a single side of the central extension. But the spring, which rests directly on the edge of the sectional iron on the side where there is no pane, is sufficiently resilient to maintain its grip in spite of the slight asymmetry thus produced.

A special device for securing sectional irons 1 to a frame is shown in detail in Fig. 3 which illustrates the terminal portion of a glazing device according to the present invention.

The part of the framework in question comprises an angle iron 4 provided with a hole at the position of the iron 1, to receive the shank 5 of a square-headed bolt 6.

This bolt has previously been introduced in the extension *a b c d, a' b' c' d'*. The dimensions of this bolt are made such that it can slide inside this extension, its head resting substantially against the walls *a b* and *a' b'*, while its shank freely extends beyond the plane *e d, e' d'*. When the bolt has been brought into the required position above the hole in the angle-iron 4, and then inserted therein, its lower portion is fitted with a nut 7 which secures the whole assembly.

The sectional irons 1, can, of course, be provided with several fixing bolts along their length.

The device to which the present invention relates can obviously be applied to any glazing system and particularly to those exposed to bad weather such as, for example, greenhouses, horticultural frames, factory roof lights, glazed partitions, glass roofs, etc. The sectional irons and the spring are preferably made of rustless light metal. They could also be made of moulded plastic material.

This device has a low cost of production. Moreover, both mounting and assembly are extremely simple and rapid, because no perforation, welding or metal-working is required for the sectional irons. Moreover, the assembly has a very long life even without varnish or paint.

It goes without saying that numerous modifications could be made to the device without departing from the scope of the present invention.

For example, the general shape of the sectional iron, instead of having sharp angles, could have an unbroken contour (except preferably at *c, c'*) the angle *e, e', d, d', a, a'*, being rounded, as might also be the face *a a'*. Any intermediate form is possible between the sharp-angled section and that with a continuous contour, depending on the tools available for shaping.

At the same time it is obvious that the shape of the spring could be modified, and in particular that it could have a section identical with that of the summit of the extension, this section comprising, for example, the contour *g, c, b, a, a' b' c' g'* in Fig. 1. Such a spring, which is illustrated separately in Fig. 4, would cover the extension of the sectional iron completely.

Finally, among other modifications, it should be mentioned that the springs could extend the whole length of the sectional irons.

What I claim is:—

1. A glazing device without putty in which the panes, supported by sectional irons the central portions of which have extensions in the shape of a T each extension separating two consecutive panes, are held by resilient locking members each of which locking members straddles the T-extension of a sectional iron and rests against each arm of the T, thus urging the panes situated on each side of the said extension against the underparts of the said sectional iron, which form gutters.

2. A glazing device as claimed in Claim 1, wherein each resilient locking member consists of the curved leaf of a spring straddling the T-extension of each sectional iron and resting with its ends against the arms thereof.

3. A glazing device as claimed in Claim 1 or Claim 2, in which each sectional iron is constituted by a single strip of metal, suitably bent.

4. A glazing device as claimed in any of Claims 1 to 3, characterised in that the sectional irons are secured to the supports on which they rest by means of bolts, the head and part of the shank of which are housed in the space formed by the extension of the said irons, these bolts penetrating apertures provided for this purpose in the said supports and being secured there by means of nuts.

5. A glazing device without putty substantially as herein described with reference to and as illustrated in Figs. 1 to 3 of the accompanying drawings.

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2 SHEETS

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SHEET 1

Fig.1

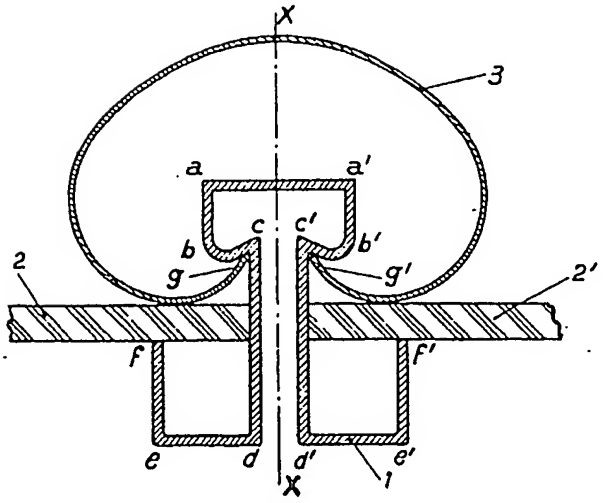


Fig.2

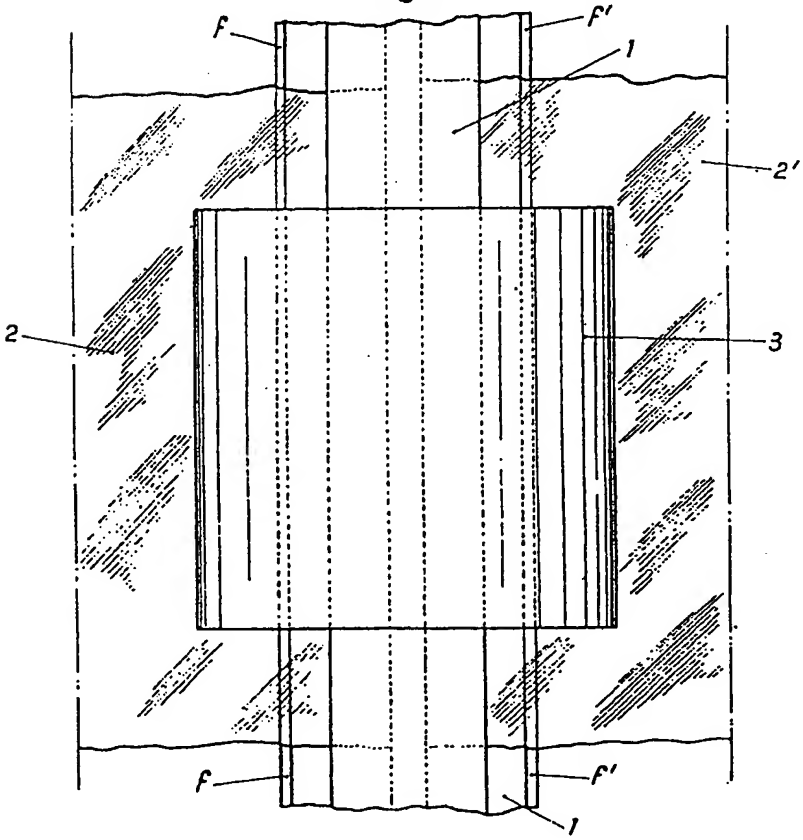
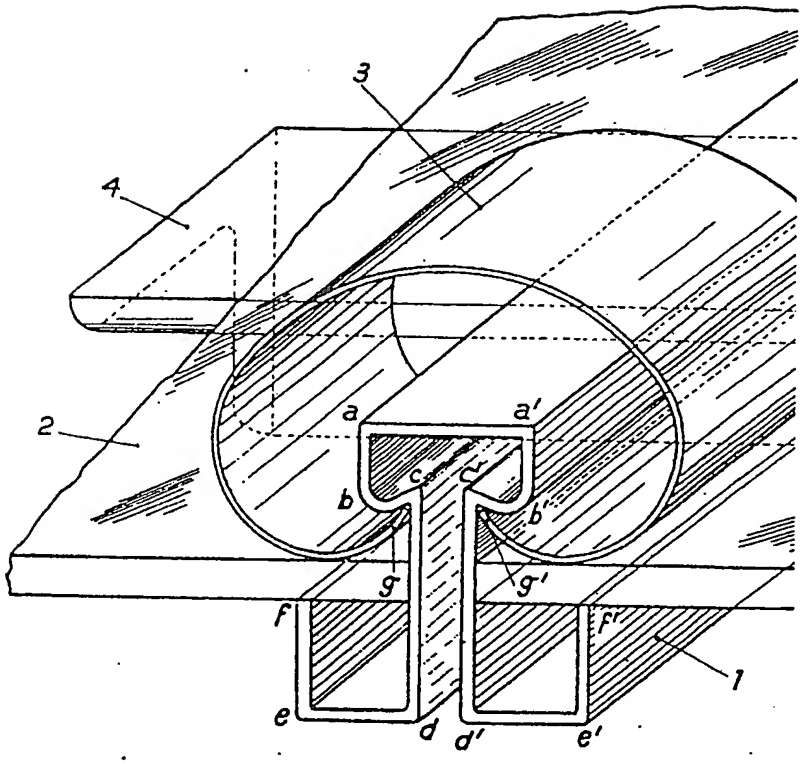


Fig.3



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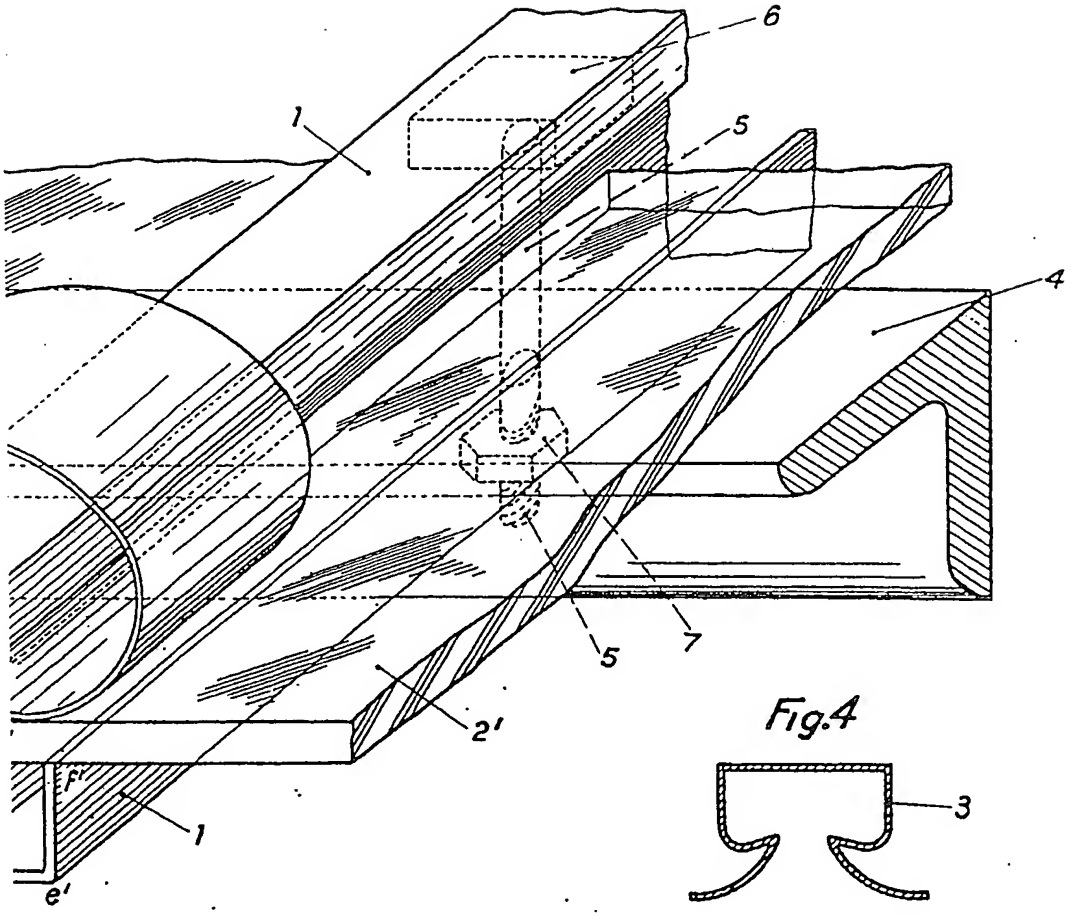

Fig.4

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SHEET 2

Fig.3

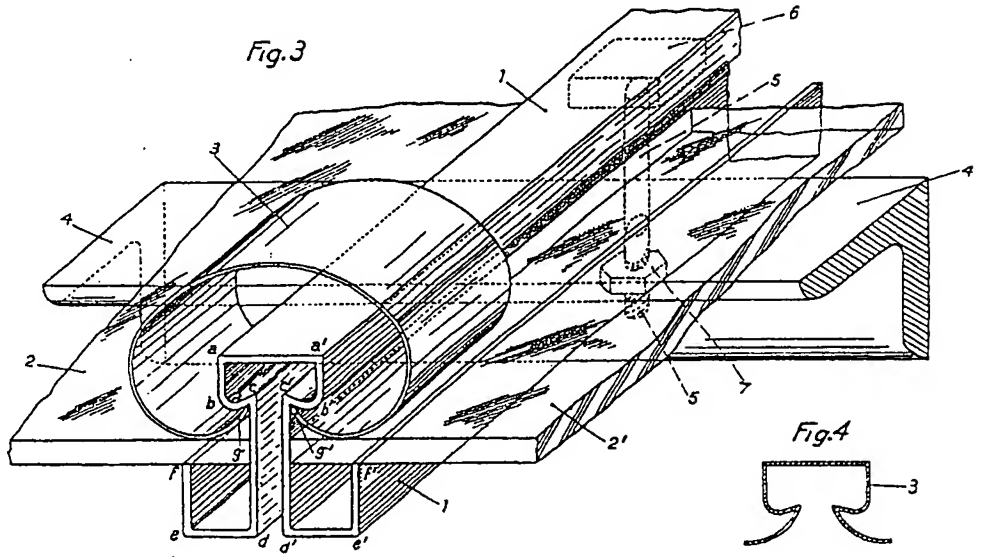

Fig.4